REMARKS

Status of the Claims

Claims 1-38 were pending.

Claims 1-38 were rejected.

Please **amend** claims 1, 4, 5, 9, 11, 15, 17, 21, 23, 25, 32 **add** claim 39, and **cancel** claims 3, 6, 7, 8, 10, 19, 20, 27.

Claims 1, 2, 4, 5, 9, 11 – 18, 21-26, 28 – 39, are pending.

It is believed that the remarks laid out herein below attend to all rejections and further issues raised in the pending office action dated 27 July 2007.

Claim Rejections

Claim Rejections Under 35USC102

Claims 1-7, 10, 12-38 were rejected under 35USC102(e) as allegedly being anticipated by Dantu et al. (US2006/0233137).

Amended claim 1 includes the following features:

each gateway originating and broadcasting beacons over a plurality of channels, the beacons being broadcast over each of the plurality of channels at a predetermined rate;

the access node receiving over a plurality of channels, beacons from at least one upstream access node or gateway, the beacons providing information of selected upstream paths to at least one of the plurality of gateways; and

the access node selecting a routing paths-between the access node and at least one of the plurality of gateways, based on a persistence of successfully received beacons, the selected routing path including multiple channels;

the access node re-broadcasting beacons corresponding to the selected routing path, over each of the plurality of channels.

In contrast, Dantu teaches a wireless-specific router topology that provides a distributed architecture in which call processing including call setup, resource preservation, air bandwidth allocation, switching, soft handoff, and micromobility is performed at the cell level. The wireless router may include a first interface operable to communicate wireless packets for a call with a remote device and a second interface operable to communicate wireline packets for the call with the wireline network.

Dantu shows (Figure 2) multiple routers 30 connected by multiple *links* 32. Dantu shows (Figure 3) and describes *multiple virtual tunnels* (such as, tunnels 70, 72) that are included within a single wireless router link 32.

Applicant disagrees with the Examiner's rejections for the following reasons:

1.   Dantu shows and describes routers connected to other routers through multiple links, not multiple channels.

        Each of the routers 30 of Figure 2 of Dantu are connected to each other router 30 through a single link 32. Each router may have multiple links, but there is only a single link 32 between each pair of routers 30.

        The claimed invention includes the access node receiving over a plurality of channels, indicators from at least one upstream access node. The routers of Dantu only receive signals over a single channel.

A link is a connection (wired or wireless) between two devices. Channels are different modes of communicating. For example, different channels can be defined by different transmit frequencies, or as described in applicant's specification, different standards, such as, 802.11(g) and 802.11(g).

2. The claimed invention includes each gateway broadcasting beacons over *each of the multiple channels*.

    The Examiner seems to be suggesting that each channel includes multiple channels. Applicants do not concede this point, but point out that even if this was true, the prior art does not teach gateways *broadcasting beacons over each of the multiple channels*.

3. The claimed invention includes the gateways broadcasting the beacons at a predetermined rate. The broadcasting beacons at a predetermined rate is not taught by the cited prior art. Broadcasting beacons at a predetermined rate over each of the multiple channels is additionally not taught by the cited prior art. This is a very useful feature because it allows downstream access nodes to be able to detect the quality of a routing path that includes multiple links and multiple channels based on the persistence of the beacons received by the access node. The worse the quality of the link, the lower the persistence of the beacons successfully transmitted through the link. The routing paths generally include multiple links, and therefore, routing path quality is reflected by the persistence of beacons through the multiple links of a routing path.

4. The claimed invention includes the access node selecting a routing path based on a persistence of beacons received through multiple channels.

The cited art does not teach simultaneously broadcasting beacons over multiple channels. Therefore, there is no way that an access node of the cited art teaches selecting a routing path based on a persistence of beacons received through multiple channels.

The Examiner cites Patel (US#7,031,266, col. 13, lines 25 - 40) as teaching reception and re-broadcasting of beacons. Patel provides a handshaking sequence between a new wireless router and neighboring routers. The beacons of the claimed invention are broadcast from the gateways at a predetermined rate – which is not taught by Patel. The claimed invention selects a routing path based on a persistence of received routing beacons – which is not taught by Patel. The selection by Patel is only based on information exchanged between the new wireless router and the neighboring routers – selection between single links, whereas the routing selections of the claimed invention are based between routing paths that each typically include multiple links.

5. The links of Dantu each include only one of different possible channels, whereas the applicant's links include multiple channels. The Examiner references paragraph 0051 of Dantu and suggest that a plurality of channels is suggested. Dantu states in paragraph 0051 "In the wireless network 10, each wireless router 30 provides *a* radio frequency (RF) link for mobile devices 44 ... "Dantu does not teach or suggest providing multiple radio frequency links. The list of channels suggested (TDMA, IS-95 ...) are merely possible channels that can be used – one at a time, not simultaneously. Therefore, Dantu cannot be construed to receive signals over multiple channels. Dantu includes multiple links, not multiple channels. Applicant's specification provides a nice example in its description of the mesh networks of Figures 4 and

6. The multiple channels of Figure 3 of Dantu are virtual tunnels, not transmission channels. The virtual tunnels 70, 72, include control channels 74a, 74b, 76a, 76b which are all within the link 32. The virtual tunnels provide management information. These are not transmission channels. However, even if they were, there is no way that indicators that provide information of selected upstream path can be received through the plurality of virtual tunnels of Dantu.

7. Dantu does not provide indicators that include information of multiple paths to a gateway, wherein the multiple paths comprise multiple channels.

Paragraph 0096 describes an IP forwarding table 270 that includes a destination IP address, outgoing interface ID for primary and secondary routers, outgoing port ID for primary and secondary routers, data link address for primary and secondary routers, hop count associated with destination for primary and secondary routers and multicast indicator. The secondary routers are use in response to the failure of the primary router.

Figure 15 shows a primary wireless router 378, secondary routers 382 and LSPs 386.

8. Dantu does not teach or suggest multiple radios within a signal access node (claim 25). Dantu does not teach radios simultaneously receiving beacons over multiple channels. Even if the links of Dantu are interpreted to include multiple channels, nothing in the cited art suggests the each of the multiple radios receiving beacons over each of the multiple channels. Additionally, Dantu does not teach selecting routing

paths based upon a persistence of beacons received through the multiple channels.

Claims 1, 17, 25, 32 are patentable over Gutierrez.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 8, 9 and 11 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Dantu et al. in view of Patel et al. (US7031266).

Claims 8 and 11 have been canceled.

Claim 9 is directly dependent on claims 1. Therefore, claim 9 is patentable over the cited references.

New claim 39 provides additional features regarding the re-broadcasting of beacons by the access node. More specifically, claim 9 includes the

the access node adjusting a link quality and path quality associated with the received beacons based on whether beacons are received within a routing cycle;

the access node retransmitting modified beacons over each of the plurality of channels if the path quality is above a threshold.

None of these features are taught be the cited prior art.

CONCLUSION

For the reasons given above, and after careful review of the cited reference, applicant respectfully submits that none of the cited references result in, teach or suggest applicant's claimed invention.

In view of the above Remarks, applicant has addressed all issues raised in the Office Action dated 26 December 2007, and respectfully solicits a Notice of Allowance for claims 1, 2, 4, 5, 9, 11 – 18, 21-26, 28 – 39. Should any issues remain, the Examiner is encouraged to telephone the undersigned attorney.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Respectfully submitted,

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